To: Ostrander, David[Ostrander.David@epa.gov]; Cristiano, Gina[Cristiano.Gina@epa.gov]
Cc: Hestmark, Martin[Hestmark.Martin@epa.gov]
From: Card, Joan
Sent: Mon 8/10/2015 5:33:05 PM
Subject: FW: Runoff data for USGS streamgage 09358550 Cement Creek at Silverton, CO

It's time to plug Bob and his office into the command structure. What's the best way to do that? Please handle. Thanks. Joan

From: Kimbrough, Robert [mailto:rakimbro@usgs.gov]
Sent: Monday, August 10, 2015 9:52 AM
To: Card, Joan
Cc: Robert Horton
Subject: Re: Runoff data for USGS streamgage 09358550 Cement Creek at Silverton, CO

Hi Joan,

Regarding your question on the effects of an additional 2 million gallons on travel time to Lake Powell. We think the effect would be negligible. At the peak of the runoff event in Cement Creek at Silverton, the flow was only 125 cubic feet per second for less than 15 minutes. Currently, the flow in the San Juan River from Farmington, NM to Bluff, UT is between 2,000 - 3,000 cubic feet per second. This volume of water is so much greater than the volume of the spill, so whether the spill was 1 mg or 3 mg, we do not think travel time would be significantly different.

Regarding travel time estimates, can you please clarify if you would like USGS to compute an estimate of when the plume might arrive at Lake Powell? I've heard some estimates in the media; however, I'm not sure if EPA is the source of this information or not. Is EPA monitoring the location of the plume as it travels downstream? If so, this information would be extremely valuable in computing travel times. I'll wait to hear back from you before proceeding with working on travel time estimates.

Lastly, are you able to tell me if the EPA is sampling the plume as it moves downstream? If not, this is an area where USGS could provide assistance. Please keep us in mind for any water-quality sampling needs.

Thank you,

Bob Kimbrough

Robert Kimbrough | U.S. Geological Survey
Associate Director for Hydrologic Data | Colorado Water Science Center
office: 303.236.6902 | cell: 720.428.9576 | email: rakimbro@usgs.gov

On Sun, Aug 9, 2015 at 1:42 PM, Card, Joan <Card.Joan@epa.gov> wrote:

> Max and others. I'm loathe to do this to you on Sunday, but am now asking if it's possible for you to help us with an estimate of travel time increase through the river system to Lake Powell due to the additional 2 million gallons?
>
> Joan Card
>
> Senior Policy Advisor
>
> Region 8
>
> Sent from my EPA iPhone
>
> On Aug 9, 2015, at 12:08 PM, Ethridge, Max <methridge@usgs.gov> wrote:
>
> > Joan,
> >
> > Yes, you can quote/attribute this estimate to USGS.
> >
> > Max

On Sun, Aug 9, 2015 at 8:48 AM, Card, Joan <Card.Joan@epa.gov> wrote:

Bob, and others, thank you very much. Our plan will be to review this information at EPA and then, likely fairly early today, announce a revised estimate based on your statement below.

Can we quote/attribute to USGS from the statement below?

Joan Card
Senior Policy Advisor
Office of the Regional Administrator
EPA, Region 8 (CO, MT, ND, SD, UT, WY)
1595 Wynkoop
Denver, CO 80202

(303) 312-6468

From: Kimbrough, Robert <rakimbro@usgs.gov>
Sent: Sunday, August 9, 2015 8:56 AM
To: Card, Joan
Cc: Max Ethridge; Lori Caramanian; Robert Horton; Timothy Raines; Suzanne Paschke; Robert Kimbrough
Subject: Runoff data for USGS streamgage 09358550 Cement Creek at Silverton, CO

Joan,

Max Ethridge asked me to provide you with the following information.

The USGS operates a streamgage near the mouth of Cement Creek in Silverton, Colorado which recorded a relatively flashy runoff event on August 5, 2015 (http://waterdata.usgs.gov/co/nwis/uv/?site_no=09358550&PARAmeter_cd=00065,00060).

The streamgage provides provisional stream stage and discharge values in 15-minute increments. The event started about 12:30 PM and ended about 7:15 PM. The total volume of runoff for the

event above base flow was calculated by 1) subtracting an assumed base flow of 27 cubic feet per second from each 15-minute discharge value, 2) using the resulting discharge values to compute the total volume of runoff for each 15-minute period (initially in cubic feet and then gallons), and 3) summing the volume of runoff for each 15-minute period. This resulted in a calculated runoff volume above base flow for the event of 3,043,067 gallons which is rounded to an estimate of 3 million gallons. The data are considered provisional because the stage and discharge records have not yet gone through a formal review. However, one of our technicians visited the gage on July 31 and August 8, 2015 and we are confident the streamgage is providing good provisional data for August 5.

Please let me know if I can be of further assistance.

Bob

Robert Kimbrough | U.S. Geological Survey
Associate Director for Hydrologic Data | Colorado Water Science Center
office: 303.236.6902 | cell: 720.428.9576 | email: rakimbro@usgs.gov

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Max M Ethridge, PhD

US Geological Survey

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